

pending claims are included below and in the Marked Up Version.

12. (Amended) A method for determining a 5-Fluorouracil-based chemotherapeutic regimen for treating a tumor in patient comprising:

- A2
- (a) obtaining a tumor sample from the patient;
  - (b) isolating mRNA from said tumor sample;
  - (c) subjecting the mRNA to amplification using a pair of oligonucleotide primers having the sequence of SEQ ID: 1, or an oligonucleotide primer at least 80% identical therewith and hybridizes to a complement of SEQ ID NO: 1 under stringent conditions; wherein said isolated and purified oligonucleotide is capable of amplifying a portion of the 5' untranslated region and Exon 1 of a *Dihydropyrimidine Dehydrogenase (DPD)* mRNA isolated from fixed and paraffin embedded (FPE) tissue when used with SEQ ID NO: 2, and an oligonucleotide having the sequence SEQ ID: 2 or an oligonucleotide primer at least 80% identical therewith and hybridizes to a complement of SEQ ID NO: 2 under stringent conditions; wherein said isolated and purified oligonucleotide is capable of amplifying a portion of the 5' untranslated region and Exon 1 of a *Dihydropyrimidine Dehydrogenase (DPD)* mRNA isolated from fixed and paraffin embedded (FPE) tissue when used with SEQ ID NO: 1; to obtain an amplified sample,
  - (d) determining the amount of *Dihydropyrimidine Dehydrogenase (DPD)* mRNA in the amplified sample;
  - (e) comparing the amount of *Dihydropyrimidine Dehydrogenase (DPD)* mRNA in the amplified sample with a predetermined threshold level for *DPD* expression;
  - (f) determining a 5-Fluorouracil-based chemotherapeutic regimen for said patient based on the difference in amount of *DPD* mRNA in the amplified sample and the threshold level for *DPD* gene expression.

A3  
C004. 13. (Amended) The method of claim 12, wherein said predetermined threshold level of *DPD* gene expression is about 2.0 to about 2.5 times that of an internal control gene expression level.

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14. The method of claim 12 or 13, wherein said internal control gene is  $\beta$ -actin.

15. The method of claim 13, wherein the tumor sample is fixed and embedded after being obtained.

16. The method of claim 13, wherein the mRNA is isolated in the presence of an effective amount of chaotropic agent.

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23. (Amended) A method for determining a 5-Fluorouracil-based chemotherapeutic regimen for treating a tumor in a patient comprising:

- A3
- (a) obtaining a tumor sample from the tumor;
  - (b) isolating mRNA from a tumor sample;
  - (c) subjecting the mRNA to amplification using a pair of oligonucleotide primers having of the sequence of SEQ ID: 7 or an oligonucleotide primer at least 80% identical therewith and hybridizes to a complement of SEQ ID NO: 7 under stringent conditions; wherein said isolated and purified oligonucleotide is capable of amplifying a portion of Exon 6 of a *Dihydropyrimidine Dehydrogenase (DPD)* mRNA isolated from fixed and paraffin embedded (FPE) tissue when used with SEQ ID NO: 8, and an oligonucleotide having the sequence SEQ ID: 8 or an oligonucleotide primer at least 80% identical therewith and hybridizes to a complement of SEQ ID NO: 8 under stringent conditions; wherein said isolated and purified oligonucleotide is capable of amplifying a portion of Exon 6 of a *Dihydropyrimidine Dehydrogenase (DPD)* mRNA isolated from fixed and paraffin embedded (FPE) tissue when used